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MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

Vol. XXVII. *January* 11, 1867. No. 3.

Rev. Charles Pritchard, President, in the Chair.

Edward William Brayley, Esq., London Institution ;
Richard Hooke, Esq., Higher Broughton, Manchester ;
Benjamin Loewy, Esq., Observatory, Kew ;
Rev. James Parkes, Stockport ;
William Osborne, Esq., York ; and
Thomas Warner, Esq., Sussex Square, Brighton,
were balloted for and duly elected Fellows of the Society.

On the Meteoric Shower of November 13–14. By G. W. H. Maclear, Esq., Second Assistant at the Royal Observatory, Cape of Good Hope.

I have the honour to report for the information of the Royal Astronomical Society the results from the watches kept up on the 12th, 13th, and 14th instants, for observing the expected meteors or shooting stars.

The station selected was on the roof of the west wing of the Observatory.

On the night of the 12th 76 were observed (see Table I.)

On the night of the 13th, between 10^h and 13^h, Cape mean time, we noted 33 in various parts of the heavens. At $13^h\ 3^m$ the shower commenced, one from above *Regulus*, darting up towards the zenith, of a fine orange colour with a long

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Cape M.T. h m	Obs.	Direction. from	to	Remarks.
13 6	1	Procyon	N.	
	1	,,	S.	
9	1	Sirius	W.	
15	1	Eridanus	S.W.	
16	1	Cetus	E. to W.	
18	1	Achernar	Larg. Mag. Cl.	
21	1	Canopus	S.E.	
22	1	Larg. Mag. Cl.	W.	
27	1	Sirius	S.E.	Brilliant.
36	1	Pleiades	N.	
42	1	Smal. Mag. Cl.	E. to W.	
,,	1	,,	S.	
43	1	Pleiades	S.E.	
44	1	Orion	N.W.	
46	1	Castor	N.	
	1	Capella	N.	
50	1	Canopus	W.	
54	1	Mars	N.	
57	1	Canopus	S.S.E.	
58	1	Aldebaran	N.N.W.	
13 59	1	Eridanus	W.	
14 0	1	Cetus	S.W.	
4	1	Taurus	S.W.	
5	1	Achernar	Small Mag. Cl.	
10	1	Larg. Mag. Cl.	β Hydræ	
18	1	Hydra	N.W.	
21	1	Canis Maj.	S.	
22	1	Orion	W.	
28	1	Hydra	E.	
30	1	Pollux	Mars	
41	1	Gemini	N.W.	
44	1	Mars	N.W.	
	1	Castor	N.E.	
45	1	Rigel	Castor	Very brilliant.
	1	Hyades	W.	
56	1	Orion	W.	
14 58	1	Canopus	S.	
15 0	1	Mars	S.	
4	1	Sirius	W.	
11	1	Gemini	Mars	
15 12	1	Sirius	α Orionis	

Total 76.

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TABLE I.

Meteors observed on the Night of the 12th November, 1866, *at the Royal Observatory, Cape of Good Hope.*

Cape M T.		Obsd.	Direction		Remarks.
h	m		from	to	
10	25	1	Orion	N.W	4th Mag.
11	22	1	Eridanus	N.	Long Train.
					4 Mag.
	24	1	,,	,,	3 Mag.
	26	1	Orion	,,	4 Mag.
	30	1	Aldebaran	,,	
	34	1	Eridanus	W.	Long Train 2°.
	35	1	,,	,,	
	42	1	Taurus	N.E.	2nd Mag. very long train, burst like a rocket.
	49	1	Cetus	S.W.	
	50	1	Eridanus	N.	
	51	1	,,	,,	
	54	1	Orion	N.	
11	57	1	,,	,,	
12	4	1	Eridanus	,,	
	6	1	Pleiades	,,	
	11	1	Canopus	N.E.	Cloudy south.
	18	2	Eridanus	N.W.	3rd Mag.
	23	1	Larg. Mag. Cl.	N.	2nd Mag.
	25	1	Eridanus	S.	
	28	1	Fomalhaut	W.	
	34	1	Eridanus	S.	
	36	1	,,	,,	2nd Mag.
	38	1	Pleiades	N.	
		1	Eridanus	,,	
	42	1	Aquarius	S.W.	
		1	Orion	W.	
	49	1	,,	E.	
	51	1	Achernar	S.W.	
	52	1	β Ceti	Achernar	Very brilliant, large as Venus.
	54	1	Rigel	W.	
	55	1	Cetus	N.	
12	56	1	Procyon	N.	
13	0	1	Eridanus	N.	
	4	1	Orion	E.	

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Cape M.T.			No. Obs.	Direction		Colour.	Remarks.
				from	to		
h	m	s					
13	14	0	1	Below Castor	Leo		
	15	0	1	,, Mars	Fomalhaut	Very long train	
	17	0	1	Regulus	S. Cross	Head orange	
	18	0	1	,,	,,	Green train	
	21	0	1	Below Leo	S.	Beautiful	,,
	22	0	1	,,	Below Castor	,,	,,
	24	0	1	,,	S. Cross	White globe	No train.
	24	30	1	Leo	α Hydræ		
	25	0	1	Leo	Below Pollux		
	26	0	1	Horizon below Leo	S. Cross	Red	Ball.
	27	0	3	3 do.			
	27	30	2	2 ,,			
	27	45	1	1 ,,			
	28	0	1	1 ,,			
	28	0	2	Leo	S.W.		
	29	0	3	,,	,,		
	29	30	1	,,	,,		
			1	,,	N.		
	30	0	1	,,	S.W.		
			2	,,	Zenith		
	31	0	1	,,	,,	..	Slow without train.
			2	,,	,,	..	Long train.
	31	30	4	,,	N.		
	33	0	1	,,	,,		
			1	,,	,,		
			1	,,	S.		
	33	30	1	,,	,,		
			1	,,	S.W.		
	34	0	6	,,	S.W.		
	35	0	1	,,	N.		
			1	,,	S.E.		
	35	20	1	,,	S.W.		
	35	40	1	,,	N.W.		
	35	50	1	,,	W.		
	36	0	1	S. Cross	S.		
	36	30	1	N.	Regulus		
	36	40	1	N.W.	W.		
	37	0	1	Leo	W.		
			1	,,	S.W.		
	38	0	1	,,	,,		
13	38	5	1	,,	,,		

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Table II.

Meteoric Shower of November 13th, 1866.

Cape M.T.			No. Obsd.	Direction		Colour.	Remarks.
h	m	s		from	to		
10	5	0	1	Pleiades	α Androm.	Blue and white	Large.
11	5	0	1	Sirius	α Orionis		Small.
	6	0	1	Pleiades	Perseus	..	"
	20	0	1	ι Argus	W.	..	"
	24	0	1	"	S.	..	"
			1	Sirius	S.E.	..	"
	27	0	1	Aldebaran	Pleiades	..	"
	30	0	1	α Orionis	N.E.	..	"
	32	0	1	Pleiades	Aldebaran	..	Curved.
	33	0	1	Orion	Aldebaran	..	Small.
	35	0	1	N.E. Mag. Maj.	Canopus	..	"
	39	0	1	Columba	Canopus	..	"
	43	0	1	Procyon	Castor	..	"
	45	0	1	"	α Columbæ	..	"
	46	30	1	α Orionis	Procyon	..	"
	55	0	1	Argus	S.	..	"
	57	0	1	ε Can. Maj.	ε Argus	Red and orange	Large.
	57	30	1	Argus	S.	..	Small.
12	0	0	1	Below ε Can. Maj.	S.	..	"
	4	0	1	" Canopus	E.	..	"
	6	0	1	" Argus	S.	..	"
	7	0	1	" Sirius	S.E.	Blue	Large.
	10	0	1	" Can. Maj.	N.E.	..	Small.
	15	0	1	" Orion	"	..	"
	21	0	1	ε Argus	Horizon	..	"
	25	0	1	Above Procyon	N.	..	"
	26	0	1	Achernar	W.S.W.	..	"
	29	0	1	ε Argus	Horizon	..	"
	48	0	1	Orion	Aldebaran	..	"
	57	0	1	Can. Min.	ε Argus	..	"
	58	0	1	Hydra	Southern Cross	..	"
13	0	0	1	β Hydræ	S.	..	"
	1	0	1	Castor	α Persei	..	"
	3	0	1	Above Regulus	α Hydræ and Zenith	Orange, green train	Long train
	12	0	1	Mars	Regulus	Orange and white	
13	13	0	1	Below Leo	Mars nearly		

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Cape M.T.	No. Obs.	Direction		Colour.	Remarks.
h m s		from	to		
13 46 0	1	Leo	N.		
"	1	"	W.		
"	1	"	Zenith		
"	4	"	W.		
"	9	"	"		
47 0	2	"	N.W.		
"	1	"	Horizontal to S.		
"	2	"	S.		
"	1	"	N.W.		
"	2	"	S.		
"	1	"	S.W.		
"	2	"	W.		
"	1	"	N.W.		
"	1	"	S.		
"	3	"	S.W.		
"	1	"	N.		
"	2	"	S.W.		
49 0	1	"	N.		
"	2	"	N.W.		
"	1	"	W.		
"	1	"	Zenith		
"	1	"	N.W.		
"	1	"	S.		
"	1	"	S.W.		
"	1	"	S.		
"	1	"	N.		
"	2	"	W.		
"	1	"	S.W.		
"	1	"	S.		
"	1	Argus	S.E.		
"	3	Leo	S.W.		
"	4	"	N.W.		
"	1	"	W.		
"	1	"	Mars		
"	2	"	S.		
"	1	"	Zenith		
13 51 0	1	"	S.		
"	14	"	W. and N.W.	Orange and green	Splendid.
"	1	"	N.W.		
"	1	"	S.W.		
"	1	"	N.W.		
"	1	"	Zenith		

Cape M.T.			No. Obs.	Direction		Colour.	Remarks.
h	m	s		from	to		
13	51	0	1	Leo	N.W.		
	"		1	"	S.		
	"		2	"	N.W.		
	"		1	"	S.W.		
	"		1	"	"	..	Horizontally.
	"		1	"	S.W.		
	"		4	"	S.		
	"		3	"	S.		
	"		2	"	W.		
	"		5	"	S.		
	"		17	"	S.W. and W.		
	"		31	"	"		
	54	0	36	"	"		
	55	0	51	"	"		
	57	0	30	"	"		
13	58	0	469	"	"		
14	8	0	100	"	"		
	10	0	100	"	"	..	Shower at its maximum.
	11	50	100	"	"		
	13	0	100	"	"		
	15	40	100	"	"		
	18	0	100	"	"		
	20	30	100	"	"		
	23	0	100	"	"		
	26	30	100	"	"		
	30	0	100	"	"		
	34	0	100	"	"		
	36	45	100	"	"		
	41	35	100	"	"		
	47	0	100	"	"		
	53	0	100	"	"		
14	59	0	100	"	"		
15	8	0	100	"	"		
	21	0	100	"	"		
	40	30	50	"	"		
15	57	0	14	"	"		
16	10	15	1	"	"		
16	21	15					

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Table III.

Meteors observed at the Royal Observatory, Cape of Good Hope, on Nov. 14*th*, 1866.

Cape Mean Time.	No. of Obs.	Direction From	To	Colour.	Remarks.
h m					
11 22	1	Taurus	N.		
11 37	1	,,	,,		
11 40	1	Sirius	S.E.	...	Brilliant
11 41	1	Hyades	N.W.		
11 47	1	Sirius	N.E.		
12 0	1	Canopus	S.		
12 22	1	Castor	E.		
12 22	1	Canopus	S.		
13 17	1	Orion	E.		
14 5	1	Procyon	E.		
14 18	1	Cetus	W.		
14 20	1	Argus	S.E.		
14 22	1	Mars	E.		
14 25	1	Castor and Perseus			
14 37	1	Mars	N.N.E.		
14 42	1	Hydra	E.		
14 46	1	Regulus	E.		
14 51	1	Orion	E.		
14 52	1	Mars	E.		
15 10	1	β Ceti	W.		
15 17	1	Centaurus	S.	...	Brilliant
15 20	1	Leo	N.W.		
14 30	1	Castor	E.		
14 30	1	Eridanus	W.		

Total 24.

Maximum and Minimum Temperatures.

Nov. 10	83°·8	57°·2
11	85·2	62·2
12	72·0	60·6

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Nov. 13	71°·2	57°·3
14	75·2	59·6
15	72·7	55·0
16	61·0	50·0

On the Luminous Meteors of November 13–14, 1866.

By Professor Challis.

The extraordinary display of meteors on November 13, was observed by me at the Cambridge Observatory in conjunction with Professor Adams and his assistants Mr. Graham and Mr. Todd. Intending to devote myself principally to the determination of apparent positions, I had prepared a small wooden instrument, which I call a "meteoroscope," which was fixed to a tripod stand, and was furnished with a straight bar for pointing, 21 inches long, and readily movable in altitude and azimuth. The movements of the bar were read off by indices from a vertical arc and a horizontal circle, which I graduated for the occasion to integral degrees. The observers were all situated on the flat roof of a detached out-building, which commanded the whole of the heavens except a small portion southward, which was intercepted by the Observatory building. As there were two meteoroscopes in use, it was agreed to divide the heavens into northern and southern halves, and as I took the northern half, my observations were generally restricted to that portion, excepting when it was covered by cloud. At the first sight of each meteor whose position I observed, I called out "Now," and Mr. Todd gave out the time, having before him a mean time chronometer, which served for the observations with both meteoroscopes. I then pointed the bar to the estimated place of the meteor, read off the altitude and azimuth angles, and mentioned the magnitude, direction of flight, and incidental physical circumstances. These data, with the time, were recorded by H. Wilberforce Clarke, Esq., R.E., of Chatham, who kindly volunteered to assist on the occasion. In this manner I obtained 63 positions of meteors, with 7 positions of stars, the latter being taken in order to serve for correcting for error of position of the axis of the instrument, which did not admit of being adjusted vertically by a spirit-level. The true altitudes and azimuths of the meteors have been calculated from the recorded angles with as much exactness as the rude nature of the observations allowed of, and, together with the Greenwich mean times, have been communicated to Mr. Glaisher, in the hope that by comparison with observations made elsewhere they might be used for determining the actual courses of the